

From: [Stephen Tzhone](#)
To: [Jon Rauscher](#); [John Meyer](#)
Cc: [Carlos Sanchez](#); [Donald Williams](#); [Gloria-Small Moran/R6/USEPA/US@EPA](#); [Casey Luckett](#)
Subject: Re: Arkwood Site
Date: 05/18/2012 11:17 AM
Attachments: [2012-0510 ELG letter to G. Moran at EPA, Region 6 \(00033100\).PDF](#)
[Third Five Year Review.pdf](#)
[ROD - Arkwood.pdf](#)
[Arkwood site map.pdf](#)
[Arkwood site map expanded.pdf](#)
[Partial Delisting2 criteria.docx](#)

Thanks Jon, from your analysis, the risk table is correct and the cleanup levels of PCP and B(a)P would suffice to meet the current industrial soil risk range/goals.

What about 2,3,7,8-TCDD?

'...The acceptability of current cleanup level cannot be easily assessed without sampling data post remedial construction for dioxins. The cleanup of PCP and B(a)P could have resulted in dioxin levels less than 0.665 ug/kg 2,3,7,8-TCDD equivalents.'

From Shawn's partial delisting draft (below), he states that: '...Boundary samples collected during remediation had 0.22 to 10.98 ppb TCDD equivalent...'

*Thus, what is the risk analysis when part of the boundary is below, and the other part above, the current industrial soil risk goal?

In addition, Shawn's draft also state that: '...If EPA accepts the 0.6 ppb as industrial standard, then the soil remedy cannot be deleted...'

**However, from your analysis of the 6" clean topsoil, it would seem to imply that risk-wise, we can still proceed ahead... please clarify if this is correct.

Thanks,

Stephen L. Tzhone
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▼ Jon Rauscher---05/17/2012 04:36:20 PM---Question 1: The table does present the current Preliminary Remediation Goals (PRG) for the three che

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Date: 05/17/2012 04:36 PM
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Question 1:

- The table does present the current Preliminary Remediation Goals (PRG) for the three chemicals.

Question 2:

- The pentachlorophenol cleanup level of 300 mg/kg is essentially equivalent to the PRG of 270 mg/kg. Risk based levels and risk estimates generally have a single significant digit of precision so PRG of 270 mg/kg could be rounded to 300 mg/kg. Therefore, the 300 mg/kg cleanup would have resulted in a cleanup within the 1E-4 to 1E-6 lifetime excess cancer risk range.
- The benzo(a)pyrene (B(a)P) cleanup level of 6 mg/kg of B(a)P equivalents would have resulted in a cleanup within the 1E-4 to 1E-6 lifetime excess cancer risk range.
- The dioxin cleanup level of 20 ug/kg of 2,3,7,8-TCDD equivalents could have resulted in a cleanup that exceeds the non-cancer PRG of 0.665 ug/kg. The acceptability of current cleanup level cannot be easily assessed without sampling data post remedial construction for dioxins. The cleanup of PCP and B(a)P could have resulted in dioxin levels less than 0.665 ug/kg 2,3,7,8-TCDD equivalents.

Question 3:

- Six inches of clean topsoil can be sufficient. Procedures would need to be in place to ensure the long-term viability of the topsoil or cover. The reuse provisions on the site will have to account for the 6 inch soil depth if excavation of soil is necessary for redevelopment.
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▼ Stephen Tzhone---05/17/2012 11:13:28 AM---Hi Jon, John, 1) Followup from discussion, essentially, the PRPs are challenging several issues: rol

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Hi Jon, John,

1) Followup from discussion, essentially, the PRPs are challenging several issues: role of Curt Grisham (landowner's son), deed restriction discrepancies, technical foundation for ready for reuse, technical foundation for partial deletion, and Agency non-coordination with PRP project coordinator. They have also called for a meeting for June/July to take steps to resolve these issues.

From what I understand from Carlos, Gloria will look into the challenges on the role of the landowner's son and any discrepancies in deed restrictions. I'll work with Casey and risk assessors to look into the challenges on the technical foundations for ready for reuse and partial deletion, along with improving coordination with the

PRPs, if needed. There is also a separate technical matter involving a groundwater ozone injection pilot at the site... EPA Ada has assigned a SME to assist in that evaluation.

2) For background, attached are: the latest letter from PRPs, the last 5 year review, 1990 ROD, and maps from GIS for visuals:

 2012-0510 ELG letter to G. Moran at EPA, Region 6 (00033100).PDF  Third Five Year Review.pdf  ROD - Arkwood.pdf
 Arkwood_site map.pdf  Arkwood_site map_expanded.pdf

Thanks,

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▼ Stephen Tzhone---05/14/2012 05:30:44 PM---Hi Jon, John, I'm researching the technical foundation for two issues (i.e.: ready for reuse and par

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Date: 05/14/2012 05:30 PM
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Hi Jon, John,

I'm researching the technical foundation for two issues (i.e.: ready for reuse and partial delisting) that have been controversial between the community and PRPs.

In my research, I reviewed a draft update (below) which states:

Chemical	PRG (10-6 or HQ = 1)	10-4 Level for Cancer PRG	Basis
PCP	2.7 mg/kg	270 mg/kg	Cancer
B(a)P	0.21 mg/kg	21 mg/kg	Cancer
2,3,7,8-TCDD	0.6 µg/kg	--	Non-cancer

'It seems under the latest industrial standards (PRGs) the soils remedy part can be deleted per the Risk Assessors...' and '...the entire site is covered with 6 inches of clean soil'.

Question 1: Does this table reflect the most current EPA industrial risk goals for

soil?

Question 2: The 1990 ROD cleanup levels were: PCP 300 mg/kg, B(a)P 6.0 mg/kg, and 2,3,7,8-TCDD 20 µg/kg. When comparing these levels to the table, only B(a)P is within the risk range... was there a rationale for the others to be considered acceptable?

Question 3: How are soil exposure pathways eliminated in an industrial risk scenario, i.e. would 6 inches of clean topsoil suffice?

Thanks,

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▼ Shawn Ghose---05/14/2012 01:20:13 PM---The message is ready to be sent with the following file or link attachments: Partial Delisting2 cr

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Date: 05/14/2012 01:20 PM
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